

REMARKS

Claims 1-20 were previously pending in the application. No claims have been added, amended or canceled. Thus, upon claims 1-20 are subject to continued examination.

FORMAL REJECTIONS:

Claims 1-20 stand rejected under 35 U.S.C. 112 first paragraph as failing to comply with the written description requirement. In particular, as best understood, the Office Action takes the position that the specification does not reasonably communicate to one skilled in the art that the inventors had possession of the claimed invention wherein the expansion restraining elements remain operative without failing since the specification does not convey parameters which determine a successful and/or failing expansion restraining element. Continued rejection on this basis is respectfully traversed and reconsideration is requested.

The test for sufficiency of support in an application is whether the disclosure reasonably conveys to the artisan that the inventor had possession at the time of filing of the claimed subject matter. Applicants respectfully submit that this standard is satisfied in the present application. In this regard, the operative condition of the expansion restraining elements is described at page 8, lines 15-17 wherein it is stated that during operation the flow of inflation gas is directed around the expansion restraining elements thereby substantially precluding inflatable expansion at the locations of their occurrence. Moreover, this operative condition is clearly illustrated in FIG. 3.

Applicants also wish to point out that in the claims the term *without failing* is used as a modifier in combination with the language *so as to provide expansion restraint upon full inflation of the air bag cushion*. Such expansion restraint is exactly what is illustrated and described in the application. Applicants respectfully submit that failure would be understood to constitute the loss of the described flow blocking expansion restraint. Thus, Applicants respectfully submit that the skilled artisan would clearly understand that there was possession of the invention as claimed at the time of filing.

While no rejection has been made under 35 U.S.C. 112 second paragraph, Applicants also respectfully submit that the language of the claims meets the requirements of that section since the language provides the requisite reasonable degree of clarity and precision when read in light of the application disclosure and the teachings of the prior art. See, MPEP §2173.02.

OBVIOUSNESS:

Claims 1-4, 7-15, and 18-20 stand rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent 6,065,772 to Yamamoto et al. in view of U.S. Patent 6,129,377 to Okumura et al.. Claims 5, 6, 16 and 17 stand rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent 6,065,772 to Yamamoto et al. in view of U.S. Patent 6,129,377 to Okumura et al. and further in view of U.S. Patent 5,618,595 to Matsushima et al.. All obviousness rejections are respectfully traversed and reconsideration is requested at this time.

The basis for all outstanding rejections is the contention in the Office Action that it would have been obvious to modify the bag of Yamamoto et al. such that the cushion is formed from a single piece of material and the expansion restraint elements remain operative upon full inflation. The asserted motivation for making these changes is the suggestion in Okumura et al. that an air bag formed from a single piece of woven fabric is simple to manufacture and that expansion restraint elements that remain operative upon inflation allow for smooth flow of inflating gas.

The Office Action correctly states that the proper test for obviousness is what the combined teachings would have suggested to those of skill in the art. However, it is respectfully submitted that the Office Action has failed to take into account the fact that the proposed modification of the primary reference would substantially alter the deployment character and final expanded profile of the cushion in that reference in contradiction to the expressed teachings of the primary reference. In this regard, the Applicants respectfully note that the references must be considered in their entirety – including portions which would lead away from the claimed invention.

The Office Action takes the position that the tear seam in the primary reference to Yamamoto et al. is not critical for successful deployment of the air bag assembly but rather aids in folding of the air bag in module (20). This position appears to be in contradiction to the express teachings in the reference as well as generally understood principles of packaging. The introduction of a seam necessarily adds bulk and complexity to a structure thereby increasing packaging space requirements and manufacturing costs. In Yamamoto et al. the tear seam 57 is added with the specific purpose of providing a controlled staged deployment of desired character rather than as a packaging aid as stated by the Office Action. Thus, the replacement of the tear seam with a seam that remains operative represents a substantial and fundamental change.

The Office Action takes the further position that replacing the tear seam in Yamamoto et al with a seam that remains operative would still provide delayed expansion of the third chamber and does not substantially alter the deployment of the third chamber. Applicants respectfully submit that this position is contradicted by the teachings of the reference itself. Specifically, the latter stages of inflation would be greatly altered and the final expanded profile would be completely different. In this regard, Applicants draw the Examiner's attention to the following statements from the primary reference.

At Col. 9, lines 19-24:

After the tear seam is entirely torn, the remaining part of the upper rear chamber 53 is deployed towards the vehicle rear side. The upper chamber 52 and the upper rear chamber 53 are combined into one, and the upper rear chamber 53 is substantially completely deployed. (Emphasis Added)

At Col 9, line 61 – Col. 10, line 2:

When the passenger is received by the lower chamber 51, and the upper chamber 52, the volume of the chambers 51 and 52 is reduced and the internal pressure thereof is temporarily increased. When the internal

pressure of the upper chamber 52 increases, the tear seam breaks, gas flows into the upper rear chamber 53, and the upper rear chamber 53 is inflated and deployed between the side of the passenger's head and the inner wall of the vehicle compartment. (Emphasis Added)

In light of the above statements, the clear teaching to be derived from Yamamoto et al. is that without a tear seam between the upper chamber 52 and the upper rear chamber 53, the controlled pressure relief of upper chamber 52 and corresponding inflation of upper rear chamber 53 will not be realized. Even if full inflation of the upper rear chamber 53 could be realized, the inflation would be substantially delayed since the seam would not open.

Potentially even more important, if the alteration proposed by the Office Action was implemented, the upper chamber 52 and upper rear chamber 53 would not be combined into one unit. Rather, the seam 57 would give rise to an uninflated zone at the intersection between the two chambers where the seam is located. Thus, in order to make the proposed modification to the primary reference, one would have to sacrifice a degree of cushioning at the location between the two chambers which is located directly opposite the passenger's head while placing a potentially abrasive seam at the same location.

Applicants respectfully submit that the principle of operation of the primary reference to Yamamoto et al. includes the development of a unitary cushioning chamber formed by the upper chamber 52 and the upper rear chamber 53 as well as controlled deployment of the upper rear chamber which is fully realized only upon the development of adequate pressure within the upper chamber 52. That is, the upper rear chamber 53 first is deployed in an upward direction to clear the seat belt and then after the seam is entirely torn, the upper rear chamber 53 can continue to expand rearwardly. Based on the teachings in the reference that rearward expansion occurs only after the seam is entirely torn, it appears that such operation would be fundamentally changed if the tear seam were replaced with a permanent seam as advocated. It is well established that if the proposed modification or combination of the prior art would change

the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

It is also well established that if the proposed modification would render the prior art invention unsatisfactory for its intended purpose, then the suggestion or modification to make the modification is presumptively lacking. In the present case, the changes proposed by the Office Action would leave an uninflated boundary zone at the location of the seam between the upper chamber and the upper rear chamber rather than the unitary inflated cushion taught by the reference. As best understood, due to the arrangement of the chambers in the primary reference this uninflated zone would be exactly at the passenger's head. Moreover the ability to increase the flow opening to the upper rear chamber thereby rapidly inflating the upper rear chamber during the secondary portion of the impact would be lost. Thus, a diminished degree of head protection would be provided.

Finally, Applicants note that the only identified motivation for including expansion restraints which remain operative is to obtain smooth flow of inflating gas. In this regard, the Office Action appears to take the position that operative expansion restraints would be expected to always improve flow. Applicants respectfully submit that such a position is overly broad and is not supported by the art or general principles of physics. That is, the smooth gas flow achieved in the secondary reference to Okumura et al. appears to be specific to the particular arrangements of tensing joints utilized. As best understood, there is no indication in any of the references that a blocking flow barrier as advocated by the Office Action in the form of a permanent seam extending substantially across a cushion to leave only a communication hole between chambers will provide smoother or better flow than a tear seam which can open upon application of a predetermined pressure. Thus, it is respectfully submitted that the motivation identified as supporting the proposed modification of the primary reference is not adequate. This is particularly true since the proposed modification would likely reduce cushioning benefits at the location of the traveler's head. That is, to make the modification, one would have to risk making the cushion of Yamamoto et al. unsuitable with no clear indication that smoother flow (or any other benefit) would be obtained.

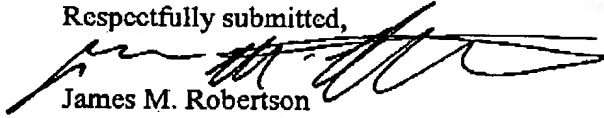
Of course, Applicants recognize that the proposed modifications could be made. However, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In the present instance, the proposed modification would change the principle of operation of the invention of the primary reference with the risk that it would be rendered unsuitable for its intended purpose by placing a zone of reduced expansion and a potentially abrasive seam in the head protection area. Moreover, the only identified motivation for making the change is to obtain smooth gas flow. However, there is no clear indication that smoother gas flow would be realized in modified arrangement.

CONCLUSION:

For the reasons set forth above, it is respectfully submitted that all claims stand in condition for allowance. Prompt allowance and passage to issue is thus requested. While Applicants have attempted to address all outstanding issues, in the event that any issue remains unresolved, the Examiner is encouraged to contact the undersigned attorney in the hope that such issue may be resolved in an expedient and satisfactory manner.

Authorization is hereby provided to deduct any fee necessary for the acceptance of this paper from Deposit Account 50-2802.

Respectfully submitted,



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